

# CD7 (M-T701)

## FORMS

Form	Catalog number	Form	Catalog number
FITC	340738	APC-R700	659115
PE	340656	V450	642921
APC	653312	BV605	657885

## DESCRIPTION

### Specificity

The CD7 antibody recognizes a 40-kilodalton (kDa) type I transmembrane glycoprotein that is a member of the immunoglobulin superfamily (IgSF).<sup>1-3</sup> The CD7 antigen is also known as Leu-9, TP41, Tp40, GP40, and T-cell leukemia antigen.

### Antigen distribution

The CD7 antigen is expressed throughout T-lymphocyte differentiation.<sup>2</sup> It is present on 85% to 90% of peripheral blood T lymphocytes.<sup>2</sup> In normal individuals, the CD7 antibody reacts with all CD8<sup>+</sup> (Leu-2a) lymphocytes, approximately 90% of CD4<sup>+</sup> lymphocytes, and most NK lymphocytes.<sup>2</sup> The CD7 antibody is weakly reactive with monocytes and does not react with granulocytes<sup>1</sup> or B lymphocytes,<sup>2</sup> although the CD7 antigen is expressed on a subset of CD19<sup>+</sup> cells in fetal bone marrow.<sup>4</sup> The CD7 antigen is expressed on 50% of thymocytes in suspension.<sup>1</sup> In leukemias, the CD7 antigen is present on the majority of T-lymphoid lineages.<sup>5</sup>

### Clone

The CD7 antibody, clone M-T701,<sup>6</sup> is derived from the hybridization of P3-X63-Ag8.653 mouse myeloma cells with spleen cells isolated from BALB/c mice immunized with P-CLL and Jurkat cells.

### Composition

The CD7 antibody is composed of mouse IgG<sub>1</sub> heavy chains and kappa light chains.

### Product configuration

The following are supplied in phosphate buffered saline (PBS) containing a stabilizer and a preservative.

Form	Number of tests	Volume per test (µL) <sup>a</sup>	Amount provided (µg)	Total volume (mL)	Concentration (µg/mL)	Stabilizer	Preservative
FITC	50	20	12.5	1	12.5	Gelatin	0.1% Sodium azide
PE	50	20	12.5	1	12.5	Gelatin	0.1% Sodium azide
APC	100	5	25	0.5	50	Gelatin	0.1% Sodium azide
APC-R700 <sup>b</sup>	100	5	12.5	0.5	25	BSA	ProClin® 300

**Analyte Specific Reagent. Analytical and performance characteristics are not established.**

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Form	Number of tests	Volume per test (µL) <sup>a</sup>	Amount provided (µg)	Total volume (mL)	Concentration (µg/mL)	Stabilizer	Preservative
V450 <sup>b</sup>	100	5	2.5	0.5	50	Gelatin	0.1% Sodium azide
BV605 <sup>b</sup>	100	5	2.5	0.5	50	BSA	ProClin 300

a. Volume required to stain 10<sup>6</sup> cells

b. BD Horizon™ APC-R700, BD Horizon™ V450, BD Horizon Brilliant™ Violet 605

**CAUTION** Some APC-R700 conjugates show changes in their emission spectra with prolonged exposure to paraformaldehyde or light. For overnight storage of stained cells, wash and resuspend in buffer without paraformaldehyde after 1 hour of fixation.

**CAUTION** Prolonged exposure of cells to paraformaldehyde can lead to increased autofluorescence in the violet channels. For overnight storage of stained cells, wash and resuspend in buffer without paraformaldehyde after 1 hour of fixation.

**CAUTION** For optimal results, use BD Horizon™ Brilliant Stain Buffer any time two or more BD Horizon Brilliant™ reagents are used in the same multicolor staining cocktail.

**NOTE** As a consideration for instrument selection, the APC-R700 conjugate is read off the red laser using an appropriate longpass (LP) mirror and bandpass (BP) filter. (For your information, the technical information for this data sheet was generated on a BD FACSTM brand flow cytometer using a 640-nm red laser, a 685 LP mirror, and a 712/21 BP filter.)

**NOTE** As a consideration for instrument selection, the BV605 conjugate is read off the violet laser using an appropriate LP mirror and BP filter. (For your information, the technical information for this data sheet was generated on a BD FACSTM brand flow cytometer using a 405-nm violet laser, a 570 LP mirror, and a 605/40 BP filter.)

#### Purity

FITC: ≤5% free fluorophore at bottling, as measured by size-exclusion chromatography (SEC)

PE, APC, APC-R700, V450: ≤20% free fluorophore at bottling, as measured by SEC

BV605: ≤25% free fluorophore at bottling, as measured by ion-exchange chromatography (IEC)

#### HANDLING AND STORAGE

Store vials at 2°C–8°C. Conjugated forms should not be frozen. Protect from exposure to light. Each reagent is stable until the expiration date shown on the bottle label when stored as directed.

#### WARNING

All biological specimens and materials coming in contact with them are considered biohazards. Handle as if capable of transmitting infection<sup>7,8</sup> and dispose of with proper precautions in accordance with federal, state, and local regulations. Never pipette by mouth. Wear suitable protective clothing, eyewear, and gloves.

Some reagents are bottled with ProClin 300, and contain 0.003% of a mixture of CMIT/MIT (3:1), CAS number 55965-84-9.



#### Warning

H317 May cause an allergic skin reaction.

Wear protective clothing/eye protection. Wear protective gloves. Contaminated work clothing should not be allowed out of the workplace. Avoid breathing mist/vapors/spray. If skin irritation or rash occurs, get medical advice/attention. Dispose of contents/container in accordance with local/regional/national/international regulations.

#### CHARACTERIZATION

To ensure consistently high-quality reagents, each lot of antibody is tested for conformance with characteristics of a standard reagent.

## WARRANTY

Unless otherwise indicated in any applicable BD general conditions of sale for non-US customers, the following warranty applies to the purchase of these products.

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## REFERENCES

1. Link M, Warnke R, Finlay J, et al. A single monoclonal antibody identifies T-cell lineage of childhood lymphoid malignancies. *Blood*. 1983;62:722-728.
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3. Williams AF, Barclay AN. The immunoglobulin superfamily—domains for cell surface recognition. *Ann Rev Immunol*. 1988;6:381-405.
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5. Weiss LM, Crabtree GS, Rouse RV, Warnke RA. Morphologic and immunologic characterization of 50 peripheral T-cell lymphomas. *Am J Pathol*. 1985;118:316-324.
6. Reiter C. Cluster report: CD7. In: Knapp W, Dörken B, Gilks WR, et al, eds. *Leucocyte Typing IV: White Cell Differentiation Antigens*. New York, NY: Oxford University Press; 1989:341-342.
7. *Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline—Third Edition*. Wayne, PA: Clinical and Laboratory Standards Institute; 2005. CLSI document M29-A3.
8. Centers for Disease Control. Perspectives in disease prevention and health promotion update: universal precautions for prevention of transmission of human immunodeficiency virus, hepatitis B virus, and other bloodborne pathogens in health-care settings. *MMWR*. 1988;37:377-388.

## PATENTS AND TRADEMARKS

BD Horizon Brilliant Violet 605 is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,227,187; 8,455,613; 8,575,303; or 8,354,239.

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